



CUSTOMER NUMBER 27792

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Chiloyan et al. Attorney Docket No: MICR0199
Serial No: 09/760,327 Group Art Unit: 2145
Filed: January 12, 2001 Examiner: T. Duong
Title: METHOD AND SYSTEM TO ACCESS SOFTWARE PERTINENT TO AN
ELECTRONIC PERIPHERAL DEVICE BASED ON AN ADDRESS STORED
IN A PERIPHERAL DEVICE

DECLARATION UNDER 37 C.F.R. § 1.131

Bellevue, Washington 98004

January 6, 2006

TO THE DIRECTOR OF THE PATENT AND TRADEMARK OFFICE:

The following declaration is made to swear behind U.S. Patent Application Publication No. US 2002/0067504 (Salgado et al.), USSN 09/731,094, which was filed on Dec. 6, 2000.

1. We, John H. Chiloyan and Samuel Mann, are applicants in the above-identified patent application, USSN 09/760,327, and are co-inventors of the subject matter described and claimed therein.

2. Prior to Dec. 6, 2000, we conceived the idea of enabling a peripheral device that is connected to a host computer to automatically facilitate the downloading of a driver for the peripheral device from a Web location. The peripheral device stores the Web address in a memory and conveys the Web address to the host computer to enable the host computer to download and install the driver from the Web location, enabling the peripheral device to be installed and used by the host computer.

3. Prior to Dec. 6, 2000, John Chiloyan prepared a Microsoft Invention Disclosure document that provided details explaining the idea that we conceived, and providing a brief enabling disclosure teaching one of ordinary skill in the art how the concept is to be implemented and used. A copy of this Invention Disclosure document is attached hereto as Exhibit A (dates redacted).

4. Prior to Dec. 6, 2000, an Invention Disclosure Meeting was held with patent attorneys Thomas Marquis and Ronald M. Anderson. The purpose of the meeting was to acquaint these patent attorneys with the idea and to explain further details of exemplary embodiments for implementing the idea, so that a patent application disclosing and claiming the idea could be prepared and filed in the U.S. Patent and Trademark Office. A copy of an Invention Disclosure Meeting Summary that was

DEC 21 2005 15:48 FR

TD 94256466314

P.03/03

1 prepared and emailed by Ronald M. Anderson to Microsoft Corporation's Legal and Corporate
2 Affairs Docketing Department within one day of this Invention Disclosure Meeting is attached hereto
3 as Exhibit B (dates redacted).

4 5. Using the information obtained from us, a draft patent application was prepared by
5 attorneys at Law Offices of Ronald M. Anderson without undue delay. The draft application was
6 sent to us for review, as indicated in a cover letter, attached hereto as Exhibit C (dates redacted).
7 Both of us reviewed the draft patent application and made changes to the draft patent application.

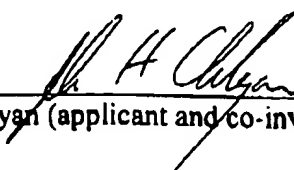
8 6. Based upon the changes that we made in the draft application, a final draft of the
9 application was timely prepared and sent to us for review, as indicated in the cover letter attached
10 hereto as Exhibit D (dates redacted).

11 7. We identified a few minor errors in the final draft and the documents, which were
12 corrected, and we received a revised final draft with documents for signature, as indicated in the
13 cover letter for the final draft attached hereto as Exhibit E (dates redacted). We reviewed the revised
14 final draft of the patent application, and after signing the documents, returned the signed documents
15 to Law Offices of Ronald M. Anderson for filing with the revised final draft patent application, in the
16 U.S. Patent and Trademark Office.

17 7. Our patent application, USSN 09/760,327, was then filed by Express Mail in the U.S.
18 Patent and Trademark Office on Jan. 12, 2001.

19 John H. Chiloyan and Samuel A. Mann each hereby further declares that all statements made
20 herein of his own knowledge are true, and that all statements made on information and belief are
21 believed to be true; and further, that these statements were made with the knowledge that willful false
22 statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001
23 of Title 18 of the United States Code, and that such willful false statements may jeopardize the
24 validity of the application or any patent issued thereon.

25
26
27 Date: December 21, 2005


John H. Chiloyan (applicant and co-inventor)

28
29
30 Date: _____

Samuel A. Mann (applicant and co-inventor)

DEC 30 2005 13:56 FR MICROSOFT MILLINIUM D425 936 7329 TO 96466314

P.02/02

1 prepared and emailed by Ronald M. Anderson to Microsoft Corporation's Legal and Corporate
2 Affairs Docketing Department within one day of this Invention Disclosure Meeting is attached hereto
3 as Exhibit B (dates redacted).

4 5. Using the information obtained from us, a draft patent application was prepared by
5 attorneys at Law Offices of Ronald M. Anderson without undue delay. The draft application was
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7 Both of us reviewed the draft patent application and made changes to the draft patent application.

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20 herein of his own knowledge are true, and that all statements made on information and belief are
21 believed to be true; and further, that these statements were made with the knowledge that willful false
22 statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001
23 of Title 18 of the United States Code, and that such willful false statements may jeopardize the
24 validity of the application or any patent issued thereon.

25
26
27 Date: _____

John H. Chiloyan (applicant and co-inventor)

28
29 Date: 12/30/05


30 Samuel A. Mann (applicant and co-inventor)

-2-b

MS 150643.01
MICRO100-1-10199Declaration.doc

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** TOTAL PAGE.02 **



Microsoft Patent Predisclosure Document

Title of Invention: Device Firmware and Host Software Update via Internet for Electronic Peripherals

Date:

Document Author(s): John H. Chiloyan; Samuel Mann

Prior Disclosure

[Has there been any disclosure of the invention outside of Microsoft? If so, please identify the party (or parties) to whom disclosed, as well as the date and circumstances under which the disclosure was made (signed/unsigned non-disclosure agreement, etc.). Disclosure may include such things as an offer for sale, a demonstration, or a publication describing a novel aspect of the invention.]

No

Introduction

[Please provide a high level description of the invention, including the names of the people who contributed to the invention.]

John H. Chiloyan
Samuel Mann

A number of consumer electronics companies sell peripherals for use with personal computers. The retail package containing the peripheral typically contains a CD-ROM. The CD-ROM typically contains data such as device drivers (which allow communication between the operating system and the device), installation programs to install client software on the computer (which provide some form of an interface to the device), etc. This invention is designed to eliminate the need for a CD-ROM (or other media such as floppy-disk, DVD, etc.) to be shipped with the peripheral.

Today, the Universal Serial Bus (USB) is a popular communications interface available on personal computers. When a USB device is attached to a computer, the operating system performs what is called an enumeration of the product. The enumeration is used by the operating system to query the capabilities and requirements of the device.

This invention adds the capability for the operating system to determine if the device has software which needs to be installed from the internet during the enumeration process. The device includes information which tells the operating system if software is available on the internet and a Uniform Resource Locator (URL; i.e. <http://www.microsoft.com/hardware/update/default.htm>) which tells the operating system where to go to find the software.

Strategic Importance of Invention:

[Please provide reasons why you think patent protection for this invention is important to Microsoft. Factors to consider include (1) is it core technology; (2) is it a feature that gives Microsoft a competitive advantage; (3) is it a feature that our competitors would want to copy; (4) does it include new APIs, file formats, network protocols, data schema or other components relating to product interoperability (5) is it related to a standard. Please include who you consider the most likely competitors and/or competitive products for this technology.]

This invention will give Microsoft Hardware a competitive advantage with all consumer electronics companies competing in the same product space. Microsoft will have the cost savings advantage of not shipping a CD-ROM in the retail package.

This invention will make the installation of Microsoft hardware products more streamlined than competitors products which require additional software to be loaded onto the host.

If Microsoft decides to give a royalty free license to consumer electronics companies to use this invention, the industry and consumers will benefit through lower cost and improved user experience during software setup.

In addition to the Universal Serial Bus, the invention could be implemented in different communications interfaces available on the personal computer. In addition to the personal computer, this invention could be implemented on products with internet access such as game consoles, TV set-top boxes, etc.; this invention could be implemented via networks with internet access such as wired/wireless networks in automobiles, home wired/wireless networks, etc.

It should be noted that the internet site pointed to by the device could contain information other than software for installation; the site could contain user manuals, further company or product information, etc. This could be useful for devices which don't require any additional software to be installed but whose manufacturers have a desire to have their web site viewed by the customer to show other product offerings, perform product registration, give access to tips for device use, etc.

Motivation for the Invention:

[Describe (1) the problem addressed by the invention (e.g., limitations of prior products of Microsoft, or others), and (2) your solution to the problem (including what "new" things your invention does and a high-level description of how it does them).]

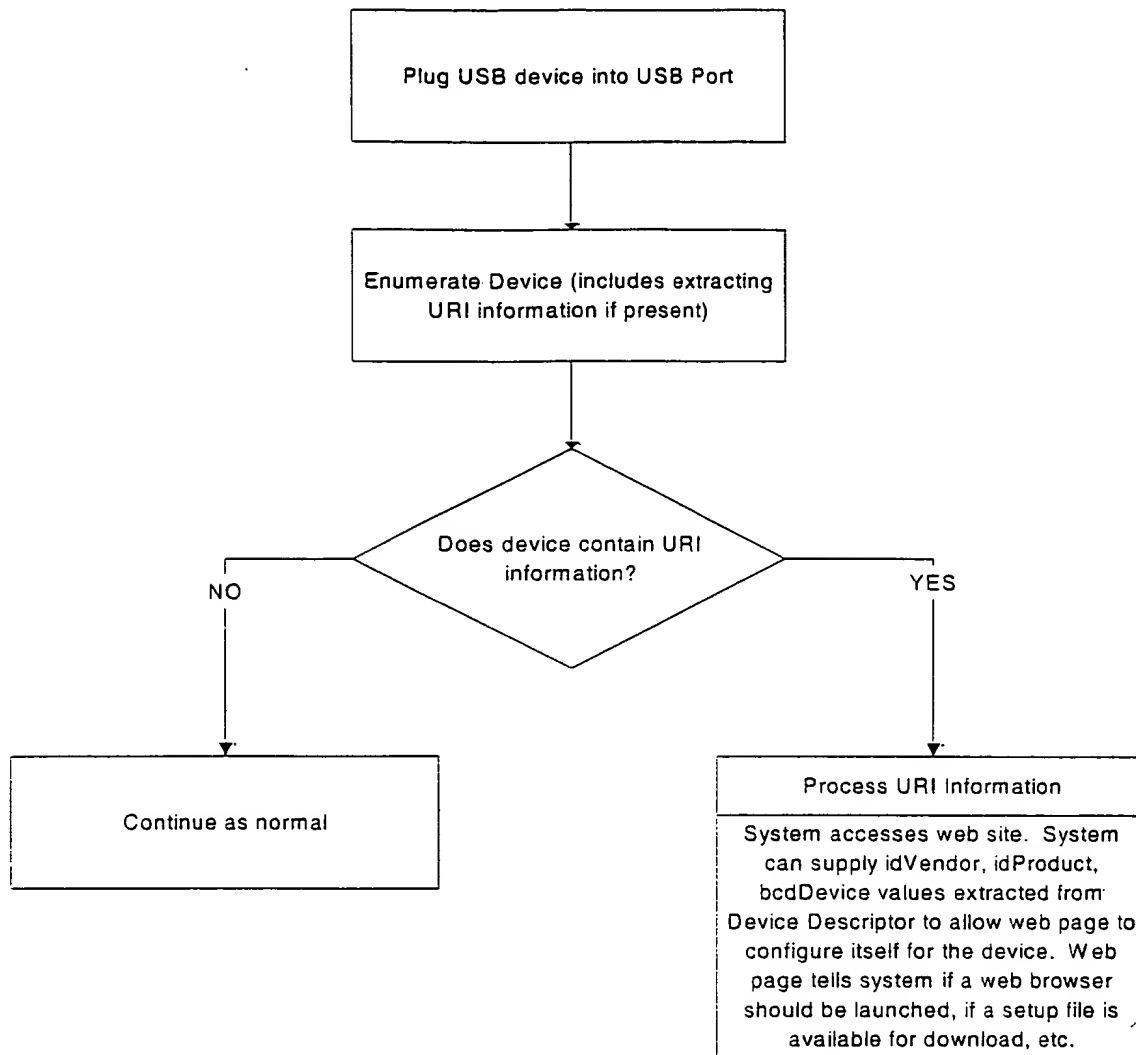
The motivations behind this invention:

1. Reduced bill of materials (BOM). This includes the material and shipping cost for the media (i.e. CD-ROM).
2. Provides the capability to improve the out of box experience for the user by automating the installation process.
3. Greater flexibility in firmware and software development schedules.
4. Improves ability to ship product on schedule. Once peripherals have been manufactured, they are typically put in a retail package along with a user manual, CD-ROM, etc. If the CD-ROM is not available, the peripherals are typically stored in packaging until the CD-ROM is available. When the CD-ROM is available, the package is opened and the CD-ROM is added. By eliminating the media from the package contents, the shipment of the product is no longer dependent on the media.

Description of the Invention:

[Describe your proposed implementation of the invention, including the architecture and design details of the implementation. The design details should include a description of the component parts of, and individual operations performed by, your implementation. The use of a specific example, showing how the invention solves the problem being addressed, can be particularly helpful. You should also mention whether you have thought of any other implementations, or applications of, your invention. In most cases, 1-2 pages of description should be adequate to start the patent application process, although a more detailed description may greatly enhance the efficiency of the process.]

An example implementation using the Universal Serial Bus is shown below.



Every USB device includes a device descriptor which the operating system reads during the enumeration process. An example device descriptor is shown below. The device descriptor contains idVendor, idProduct and bcdDevice fields. These codes identify the vendor, product and firmware revision of the device. The web site could use this information to customize its action (supply the OS with a driver for the device, supply the OS with a client application, have the OS launch a web browser, do nothing, etc.). In addition, the OS could supply all of the strings referenced by the device descriptor (the web site might want to perform further customization or database tracking based on the serial number of the product, etc. Providing the serial number to the web site of the manufacturer could also allow the mfg. to determine if the device is a counterfeit and thereby not allow the user to download a driver. If there were mfg. problems with some units, which the mfg. could identify by serial number, the mfg. might be able to supply customized drivers or device firmware which address the problems).

Example Device Descriptor:

Offset	Device Descriptor	Size (bytes)	Value	Description	Notes
0	bLength	1	0x12	Size of this descriptor in bytes	
1	bDescriptorType	1	0x01	Descriptor Type	DEVICE Descriptor
2	bcdUSB	2	0x0110	USB Spec Release number in binary-coded decimal encoding which device is compliant with	v1.1
4	bDeviceClass	1	0x00	When this field is zero, interface descriptor contains class specifier	
5	bDeviceSubClass	1	0x00	Qualified by bDeviceClass field; must be zero if bDeviceClass is zero	
6	bDeviceProtocol	1	0x00	Qualified by the bDeviceClass and bDeviceSubClass fields; when zero, device does not use class specific protocols on a device basis	
7	bMaxPacketSize0	1	0x08	Max packet size for endpoint zero	
8	idVendor	2	0x045E	Vendor ID - assigned by USB org	Microsoft ID
10	idProduct	2	0x0033	Product ID - assigned by MS Hardware Group	Device PnP ID
12	bcdDevice	2	0x0100	Firmware revision represented in binary-decimal encoding	v1.00
14	iManufacturer	1	0x01	Index of string descriptor describing manufacturer	Index 1
15	iProduct	1	0x02	Index of string descriptor describing product	Index 2
16	iSerialNumber	1	0x00	Index of string descriptor describing device's serial number; when zero, indicates no string descriptor exists	
17	bNumConfigurations	1	0x01	Number of possible configurations	

Devices could support a Vendor Specific Device Request, like the example shown below, which the operating system could use to determine if the device contains an internet address.

Example VSD Request GET_INTERNET_ADDR

Packet Format: (Supplied by host)

bmRequestType	bRequest	wValue (LSB)	wValue (MSB)	wIndex (LSB)	wIndex (MSB)	wLength
11000000b	0xC0	0x01	0x00	0x00	0x00	0x0001

Packet Format: (Returned by device)

Byte	Value	Description
0	0x00	Device does not have an iInternetAddr string
0	Non-zero	Index of string descriptor describing the internet address

The internet address could be stored as a USB string descriptor in the device. In this example, we call the string an iInternetAddr. The encoding format shown below is in hex.

Example iInternetAddr String Descriptor at Index 0x03 as an example

bString is UNICODE encoding for string "http://www.microsoft.com/hardware/update/default.htm"

Offset	String Descriptor	Value
0	bLength	0x6A
1	bDescriptorType	0x03
2	bString	68 00 74 00 74 00 70 00 3A 00 2F 00 2F 00 77 00 77 00 77 00 2E 00 6D 00 69 00 63 00 72 00 6F 00 73 00 6F 00 66 00 74 00 2E 00 63 00 6F 00 6D 00 2F 00 68 00 61 00 72 00 64 00 77 00 61 00 72 00 65 00 2F 00 75 00 70 00 64 00 61 00 74 00 65 00 2F 00 64 00 65 00 66 00 61 00 75 00 6C 00 74 00 2E 00 68 00 74 00 6D 00

The following is a descriptor which describes the UNICODE country encoding format of the string:

iLangID String Descriptor

Offset	String Descriptor	Size	Value
0	bLength	1	0x04
1	bDescriptorType	1	0x03
2	bString	2	0x0409

The operating system could use the following standard USB request to read the contents of the iInternetAddr string.

GET_DESCRIPTOR

Packet Format: (Supplied by host)

bmRequestType		bRequest	wValue (LSB) (Descriptor Index)	wValue (MSB) (Descriptor Type)	wIndex	wLength (Descriptor Length)	Description
Binary encoding	Hex encoding						
10000000b	0x80	0x06	0x03	0x03	0x0409	Variable	iInternetAddr String

Diagrams and Flow Charts:

[To support the description provided above, please include: (a) at least one block diagram showing the architecture of the system that implements your invention, and (b) at least one diagram illustrating the primary steps performed by your invention.]

[click here and type]

Additional Information:

- List the names of any people who contributed to the invention.

[click here and type]

- List any earlier, current or anticipated MS products that may use your invention:

[click here and type]

- List and attach (or provide pointers to) any documents that provide additional information about your invention or the product to which it relates, including specifications, journal articles, slide presentations, test/performance results, etc.]

For an overview of USB and access to USB specifications, refer to <http://www.usb.org>; USB Specification 2.0, section 9.1.2 Bus Enumeration, all of chapters 8 and 9.

- List any other sources that would provide helpful background information or illustrate prior work of others in this area (including, e.g., journal articles, text books, product literature, products, and specifications):

[click here and type]

-----Original Message-----

From: Ron Anderson (Law Offices of Ronald Anderson)
Sent:
To: MSDocket (E-mail)
Subject: MS 150643.1 (MICR0199) Invention Disclosure Meeting Summary

DATE:

TITLE: Device Firmware and Host Software Update via Internet for Electronic Peripherals

OUR REFERENCE NUMBER: MICR0199-1-1

DATE AND ATTENDEES AT DISCLOSURE MEETING: The Invention Disclosure Meeting was held on _____ and was attended by John H. Chiloyan, Stacy Quan, Melinda Hoggard, Thomas Marquis, and Ron Anderson.

INVENTORS INITIALLY IDENTIFIED: John H. Chiloyan, Samuel Mann

BRIEF SUMMARY OF THE INVENTION: Many computers and peripherals today comply with Universal Serial Bus (USB) standards and have USB interfaces. Since WINDOWS 98™ (with the exception of WINDOWS NT™), Microsoft's operating systems have been able to automatically hot detect the new connection or disconnection of a USB peripheral device and –enumerate the device so that it is usable in the computer system. However, when a new USB peripheral device connected to a computer for the very first time, it is currently necessary to run a setup program and/or provide a CD-ROM or floppy disk on which the driver for the USB peripheral and any client application software is stored, unless the driver is provided with the operating system. Since the drivers for USB peripheral devices are often not previously provided with the operating system, the users must load or otherwise provide the material manually. The required interaction by the user to initially install a USB device thus detracts from a quality user experience, since the initial installation of the USB device is not truly a "plug and play" operation.

Typically, the operating system detects the presence of a new peripheral, and then requests the user to insert a CD-ROM or other medium supplied with the peripheral device, that contains the device driver, and other related software, manual, etc.. Producing and distributing such CD-ROMs represents a considerable expense to peripheral vendors.

Device drivers and other materials are often available via the Internet, and most computers have either full-time connections or at least a dial-up connection to the Internet. Peripheral vendors need not supply CD-ROMs with USB peripheral devices if users are instead required to obtain the materials via the Internet. However, this option is also a manual process accomplished by the user and can delay the initial installation of a USB peripheral on a computer.

The present invention solves these problems, enabling the operating system to automatically obtain the USB device driver for a new USB device and any related software/document material via the Internet, eliminating the need to supply CD-ROMs with peripherals, thereby providing true plug-and-play capability, even upon first use of a USB peripheral.

The invention takes advantage of the USB standard enumeration process that the operating system performs when a peripheral is connected to a computer. The enumeration process is a query by the operating system of the newly connected device to determine certain parameters. During enumeration, the operating system queries the USB peripheral device for tables of information called descriptors, which every USB-compatible peripheral contains. The descriptors are stored in ROM in the USB peripheral device, and include information such as vendor identifier, product identifier, device capabilities, and so on..

The USB standard also allows for a vendor to optionally include string descriptors. A string descriptor is a type of descriptor which contains a string such as a manufacturer name (i.e. "Microsoft Corporation"), product name (i.e. "Microsoft SideWinder Game Device") and so on. The present invention requires that a vendor include an Internet address in a string descriptor at which the USB device driver and related

software/documents can be obtained. The invention further provides that when the operating system performs its enumeration of the USB peripheral, if a driver for the USB device is not yet installed, the operating system checks for the presence of an Internet address in the device descriptor. If an internet address is present, then the operating system launches a task to access that Internet address, retrieve and install the device driver and/or other software material, and perform any other task provided through accessing the Internet address.

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Fax (425) 646-6314

Patent Group Docketing Department
Microsoft Corporation
One Microsoft Way
Building No. 114
Redmond, WA 98052-6399

Re: New U.S. Patent Application
Title: DEVICE FIRMWARE AND HOST SOFTWARE UPDATE VIA
INTERNET FOR ELECTRONIC PERIPHERALS
Inventors: John H. Chiloyan and Samuel Mann
Microsoft Reference: 150643.1
Our Reference: MICR0199-1-1

Dear Docketing:

Enclosed please find a draft of the above-identified patent application, a set of drawings, and a document entitled "Guidelines for Reviewing a Patent Application Draft." Please arrange for each of the inventors to review the draft application for technical accuracy and completeness, while bearing in mind that it must contain enough information to teach a person of ordinary skill in the art to make and use the invention, and must disclose the best mode known to the inventors for carrying out the invention. The numbered claims located near the end of the application should be given special attention in order to ensure that they appear to provide adequate protection for the invention if granted.

Please contact us to describe any changes or additions or send us a marked-up copy of the draft by

Very truly yours,

Ron M. Anderson

RMA:mlb

Enclosures
Draft Application
Drawings
Guidelines

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EXHIBIT D

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Patent Group Docketing Department
Microsoft Corporation
One Microsoft Way
Building No. 114
Redmond, WA 98052-6399

Re: U.S. Patent Application
Title: DEVICE FIRMWARE AND HOST SOFTWARE UPDATE VIA W
ADDRESS STORED IN ELECTRONIC PERIPHERALS
Inventors: John H. Chiloyan and Samuel A. Mann
Microsoft Reference: 150643.1
Our Reference: MICR0199-1-1

Dear Docketing:

Enclosed is a final draft of the above-identified patent application, a Combined Declaration and Power of Attorney attached thereto, a set of formal drawings, and an Assignment of the invention to Microsoft Corporation.

Please arrange for each of the inventors to again review the application before executing the application documents. Once their final review has been completed, please arrange for the inventors to execute the Combined Declaration and Power of Attorney and Assignment documents where indicated. Please note that the Assignment must be executed in the presence of a Notary Public. Additionally, the Assignment must indicate, *for each inventor*, the date *that inventor* signed the Combined Declaration and Power of Attorney. The Combined Declaration and Power of Attorney is to remain attached to the patent application at all times.

If any changes are needed, please call us so that a revised set of papers can be provided if needed. Please do *not* make any changes in the application or papers without first discussing the matter with us. Additionally, if there are any questions regarding the above steps, please contact us.

Once the above steps have been completed, please forward all of the enclosed documents to us for filing with the United States Patent and Trademark Office.

Very truly yours,

A handwritten signature in cursive script that reads "Ron Anderson".

Ron M. Anderson

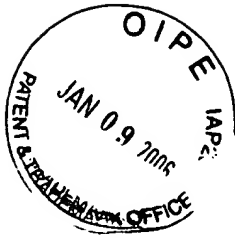
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Patent Group Docketing Department
Microsoft Corporation
One Microsoft Way
Building No. 114
Redmond, WA 98052-6399

Re: New U.S. Patent Application
Title: METHOD AND SYSTEM TO ACCESS SOFTWARE PERTINENT TO AN
ELECTRONIC PERIPHERAL DEVICE BASED ON AN ADDRESS STORED IN A
PERIPHERAL DEVICE
Inventors: John Chiloyan and Samuel Mann
Microsoft Reference: 150643.1
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Very truly yours,

Ron M. Anderson

RMA:klp

Enclosures

Finalized Patent Application
Combined Declaration and Power of Attorney
Drawings
Assignment